AF/2832

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	Atty. Docket
JACOBUS W. VALLEN	PHN 16,749
Serial No. 09/224,913	Group Art Unit: 2832
Filed: January 4, 1999	Examiner: T. Nguyen

Title: ELECTRIC BALLAST

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On: May 6, 2004

By: Elissa DeLucy

Commissioner for Patents
Alexandria, VA 22313

Sir:

Enclosed is an original plus two copies of a Supplemental Reply Brief in the above-identified patent application.

Respectfully submitted,

By Bernard Franzblau

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On: May 6, 2004

By: Elissa DeLucy

SUPPLEMENTAL REPLY BRIEF

Sir:

This is a Supplemental Reply Brief in response to the Supplemental Examiner's Answer dated 4/9/04. The original Notice of Appeal was filed on 11/30/00.

REAL PARTY IN INTEREST

The real party in interest in this appeal is the assignee of all rights in and to the subject application, U.S. Philips

Corporation, a Delaware corporation, whose ultimate parent corporation is Philips Electronics, NV of the Netherlands.

RELATED APPEALS AND INTERFERENCES

To the best of the knowledge of the undersigned, no other appeals or interferences are known to appellants, appellants legal representatives, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1 and 2 were cancelled. Claims 3-5 are the subject matter of this appeal.

STATUS OF AMENDMENTS

An amendment after final rejection was filed on October 16, 2000 and was entered in an advisory action dated November 3, 2000.

SUMMARY OF THE INVENTION

An electric ballast (1) includes an electric coil with coil windings (115) having a width d and which are wound on a synthetic resin coil base (10) comprising a box-like base part (11) of rectangular shape having four faces (111,112,113,114). The base

part is adapted to accommodate a metal core (not shown) of the coil. Mutually parallel flanges (121,122), which define the width d, are provided on opposite sides of the base part (11). The coil base (10) is provided with a connection member (250) for engaging an external electrical connector. A separate insulating synthetic resin cover (20) includes as a part thereof an external insulator (25) which engages the connection member (250) of the coil base (10). The cover (20) engages the coil base (10) and cooperates therewith to substantially completely enclose the coil windings.

In a preferred embodiment of the electric ballast, the cover (20) has n portions (21,22) which are connected together when the cover is in engagement with the coil base so as to substantially completely enclose the coil windings (115). The end portions (21,22) of the cover connect together by snap connections (23,24).

ISSUES

The first issue is whether or not claims 3-5 are indefinite under the provisions of 35 U.S.C. 112, second paragraph.

The second issue is whether or not claims 3 and 5 are obvious over Witchger (U.S.P. 4,291,292) in view of Sugiura et al (U.S.P. 5,153,550) under 35 USC 103(a).

The third issue is whether or not claim 4 is obvious over Witchger in view of Sugiura et al and Leach et al (U.S.P. 4,363,014) under 35 USC 103(a).

GROUPING OF CLAIMS

The rejected claims do not stand or fall together since they contain different novel features and structure that are distinct from one another. For example, claim 3 further defines the cover as having end portions which connect with each other when the cover is in engagement with the coil base so as to substantially completely enclose the coil windings. Claim 4 adds the further feature that the end portions of the cover connect with each other by one or more snap connections.

PRIOR ART OF RECORD

The Patent and Trademark Office listing of the applied prior art in paragraph (9) of the Supplemental Examiner's Answer is correct.

ARGUMENT

I. Rejection of claims 3-5 under 35 USC 112, second paragraph.

Claims 3-5 stand rejected under 35 USC 112, second paragraph, because the claims are allegedly indefinite because of the presence

of the term "substantially" at claim 5, line 16 thereof, which is alleged to be a relative term. The same rejection applies to the term "substantially" at claim 3, line 4. The Patent and Trademark Office further argues (page 7 of the Supplemental Examiner's Answer) that the term "substantially" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The examiner appears to be under the mistaken impression that the use of a relative term in a claim automatically makes the claim indefinite. This is manifestly incorrect as one can readily appreciate from the millions of claims in US patents that contain relative terms. For example, reference to the Witchger patent (USP 4,291,292) applied by the Patent and Trademark Office against claims 3-5 shows many such examples, e.g. claim 1 - elongate strip of resilient material; said lead extending parallel to the face of said strip, and claim 3 thereof - said one end is generally pointed; its largest dimension is less than the dimension transverse to said strip; the material being sufficiently resilient. Other claims of this patent contains still other relative terms. Also see the applied Sugiura et al patent (USP 5,153,550), i.e. claim 1 - radially extending relative to the coil, and Leach et al (USP 4,363,014), claim 1 - slots being narrower

than etc.; a relatively rigid U-shaped member; a plurality of flexible legs extending downwardly.

As to the particular term "substantially" in claims 3 and 5 of this application, the Patent and Trademark Office argues that "the 'substantially' term rejection under 112, second paragraph is maintained because, the term 'substantially' is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one or ordinary skill in the art would not be reasonably apprised of the scope of the invention." This statement by the Examiner is a mere statement of his opinion without a shred of factual support therefor. The "112" rejection is clearly invalid because the Examiner's Answer does not set out any factual evidence and thus does not satisfy the Patent and Trademark Office burden of proof on the "112" issue involved in this appeal.

Furthermore, the term "substantially" has received widespread recognition and acceptance by the Patent and Trademark Office, see, for example, USP 4,235,302 (claim 1 - "substantially lower than"); USP 3,648,153 (claim 1 - "substantially constant current source"); USP 3,782,258 (claims 1 and 2 - "substantially impedance-free connection"); USP 3,864,532 (claim 8 - "substantially non-reactance elements"); and USP 4,361,735 (claim 1 - "substantially no resistance", claim 11 - "substantially greater than").

Furthermore, in the CAFC case of In re Mattison and Swanson, 184 USPQ 84, the Court found that the term "substantially increase the efficiency" etc. satisfied both Section 1 and Section 2 of 35 U.S.C. §112. The Court reasoned that 35 U.S.C. §112, second paragraph, was satisfied because the specification provided general guidelines for the term. More particularly, if the claimed modification of the prior art compound achieved Applicant's object of substantially increased efficiency of the prior art compound, then such a modified compound is within the scope of the claims and 35 U.S.C. §112, second paragraph, is satisfied.

In the present case, the specification clearly indicates what Applicant intends to achieve by his invention, i.e. to overcome certain defects in the prior art electric ballast described in EP-0 018 596 (see page 1 of application). Applicant's aim is to provide an electric ballast with a separate one-piece synthetic resin body which externally encloses the coil winding such that the prior art (EP-0 018 596) folding seams in the synthetic resin of the base part are no longer necessary (page 1 of application).

The advantages of Applicant's invention are extensively discussed in the application at page 1, lines 23-29 and all of page 2 thereof. One object of the invention is to "enclose the coil windings" (see page 3, lines 31-33, page 4, lines 6-7 and lines 20-21). The purpose of the term "substantially" is to ensure that small, inconsequential gaps in the coil enclosing function by a

potential infringer do not avoid the patent, while the infringer achieves the advantages thereof. Thus, it is clear that any structure which achieves the disclosed objects and advantages of the invention, e.g. improved insulation function, small volume of the ballast, etc. (see pages 1-2 of the application), fall within the scope of the claims. In accordance with the CAFC decision in the Mattison et al case, the specification of this application makes the use of the term "substantially" clear and definite within the demands of 35 U.S.C. §112, second paragraph. This is especially true since the Examiner's Answer does not provide any contrary factual support for his unsupported opinion on this issue.

Claims 3-5 are in full compliance with the requirements of 35 USC 112, second paragraph.

II. Rejection of Claims 3 and 5 under 35 USC 103(a)

Claims 3 and 5 were rejected under 35 USC 103(a) as being unpatentable over Witchger (U.S.P. 4,291,292) in view of Sugiura et al (U.S.P. 5,153,550).

Claim 5 is unobvious and therefore is patentable over the applied prior art of record, Witchger and Sugiura et al. First of all, this claim claims an electric ballast, whereas the Witchger patent is directed to an electric coil having means for the attachment of external supply lead wires to an electromagnetic coil assembly. The Sugiura et al patent is directed to a coil assembly

for an electromagnetic valve for use in a vehicular hydraulic control circuit. Clearly, neither of these references has anything to do with any problems that exist in the art of electric ballasts and therefore no one skilled in the electric ballast art would look to either of these references in order to design an electric ballast that was intended to solve some problem or defect in prior art electric ballasts, much less to solve the prior art problems discussed at pages 1 and 2 of the present application so as to achieve the useful advantages also set out at pages 1 and 2 of this application.

Furthermore, as the reference patents are in non-analogous arts to that of applicant's invention, a higher burden of proof is placed on the Patent and Trademark Office as to the issue of the obviousness to combine them under 35 USC 103. For example, why would one skilled in the art relating to electric ballasts for discharge lamps look to the Sugiura et al patent, which deals with a vehicle hydraulic control circuit, for guidance in order to solve a problem related to an electric ballast. The electrical characteristics of devices in these two arts are so different that it would not suggest itself to the electric ballast engineer to look for solutions in the Sugiura et al patent. It is only by virtue of the hindsight provided by applicant's present patent application that a motivation is presented to the examiner to look into the Sugiura et al and Witchger prior art in order to reject

the claims of this application.

It is further noted that the final rejection and Supplemental Answer are not entirely clear as to how the Patent and Trademark Office proposes to combine the two references, Witchger and Sugiura et al, in order to produce the electric ballast as claimed in claim 5 of this application. The final rejection and Supplemental Answer state that Witchger discloses the claimed invention except for a connection member being integrally formed with one of the bobbin flanges and Sugiura et al discloses a bobbin having an end flange integrally supporting an external connection member, and a cover having a terminal protection portion integrally formed therewith. The examiner then concludes that it would have been obvious to mount the external connection members of Witchger on the flange of the bobbin, as "suggested" by Sugiura et al for the purpose of facilitating connections of the leads and placement of the cover. But the examiner's proposed modification of the Witchger device would not in fact facilitate connections of the leads and placement of the cover. The examiner's proposed modification would further complicate the Witchger device and increase its cost since it would then be inconvenient, in fact very difficult, to arrange the resilient strip cover 31 so as to cover the wire ends 21A, 22A and the coil winding wire ends 12A and 12B if external connection members of Witchger were mounted on the bobbin flange, as allegedly suggested by Sugiura et al. It also would not be obvious to

modify the Witchger device by substituting for the resilient strip (cover) 31 of Witchger the teachings of Sugiura et al, i.e. providing the connection member (12) of Sugiura et al on the flange of the Witchger device and providing as a cover therefor the casing (20) with the integral terminal housing (21) for covering the connection member (12) as shown by Sugiura et al. This is so because the Witchger invention involves the particular use of the strip 31 and the connection thereto of the wire leads 21,22.

More particularly, the Witchger invention involves a method of attaching current supply leads to a single strip of a dielectric material conveniently attachable to a coil without the use of adhesive (see col. 1, lines 33-39 of Witchger). Also see independent claims 1 and 8 of Witchger each of which comprise an elongate strip of material and a first lead fastened to said strip. To modify the Witchger device by substituting for the elongate strip of resilient material (31) having wire leads (21A, 22A) fastened thereto, the connection member (12) of Sugiura et al on a flange of the Witchger device, along with the casing (cover) 20 and integral terminal housing (21) thereof, would defeat the very purpose of the Witchger invention, as described above. In this regard, please note the Board of Appeals decision in the case of Ex parte Thompson, 184 USPQ 558, which held that in the case of a claim rejected under 35 USC 103, it would not be obvious to substitute an element of a first reference for an element of a

second reference where to do so would destroy the apparatus of the second reference for its intended purpose.

Thus, it would not be obvious to modify the Witchger device by substituting for strip (31) with its attached wire leads (21A, 22A) the casing (20) with integral terminal housing (21) of Sugiura et al. Such a substitution would defeat the entire purpose and object of the Witchger invention, i.e. the novel attachment method which requires the strip (31) with its attached wire leads (21A, 22A). It also would not be obvious to mount the external connection members of Witchger on the flange of his bobbin, as proposed by the examiner.

Furthermore, if the only purpose of the Sugiura et al patent in the final rejection is to teach the mounting of external connection members on the bobbin flange, as per the last paragraph on page 3 of the final rejection and page 5, penultimate paragraph of the Supplemental Answer, then the thin strip (31) of flexible material of Witchger (having some resilience) could not support an external insulator such as the terminal housing 21 of the Sugiura et al cover member 20, much less in a manner so as to engage a connection member on a coil base. The Sugiura et al coil assembly requires a rigid casing (cover) 20, which is not present in Witchger because the latter reference covers the windings of the coil base with a thin flexible resilient tape (31).

It therefore would not be obvious to modify the Witchger electric coil so that the cover 31 has an external connector part as defined in claim 5. The "103" rejection of claim 5 is invalid because the Final Rejection and Supplemental Answer do not present the factual evidence required by 35 U.S.C. §103 in order to set out a prima facie case of obviousness.

The Patent and Trademark Office arguments as to claims 5 and 3, in paragraph (11) of the Supplemental Answer, as related to Applicant's argument [3] regarding non-analogous art of the applied references, the Examiner relies on the case of In re Oetiker, 24 USPQ 2d 1443 and the argument that "Applicant has not claimed any specific structure regarding the application of the winding assembly, but rather the winding assembly itself." This is incorrect since independent claim 5 calls for an "electric ballast" and page 1 of the application indicates that the invention is related to a ballast for an electric gas discharge lamp. Electric ballasts are required to have special characteristics because of the peculiar nature of the load they feed, i.e. an electric gas discharge lamp which has a negative resistance characteristic and requires a high ignition voltage and a much lower operating voltage. Thus, the Patent and Trademark Office argument in Section [3] of paragraph (11) is wrong since claims 5 and 3 claim a specific structure of an electric ballast, not a mere general purpose winding assembly, as alleged in the Examiner's Answer. As

the CAFC has said, the preamble of a claim gives life and meaning to the claimed subject matter. Thus, the preamble provides the context for the claimed invention.

Aside from the fact that neither Witchger or Sugiura et al disclose anything at all to suggest that either of these references have characteristics that would be useful as part of an electric ballast, the objects and advantages of each apparatus have nothing at all to do with the requirements of an electric ballast and so one skilled in the art who is tasked with the design of an electric ballast would not consult either reference for guidance. Even if these references were considered, neither suggests that either apparatus would be useful as an electric ballast because the descriptions thereof provide no hint that they could efficiently operate a gas discharge lamp in the manner required of an "electric ballast".

Furthermore, the invention in the Witchger patent is directed to a particular problem in the manufacture of electric coils, which it solves by attaching current supply leads to a single strip of dielectric material strip attachable to a coil without use of adhesive, more particularly to the use of a flexible dielectric strip (31) with an aperture (33) at one end and with an arrowhead (32) with notches 41, 42 in order to facilitate fastening the strip (31) in a manner that will enclose the coil winding. This is the raison d'etre of the Witchger patent. To modify same as suggested

by the Examiner, that is by the use of the Sugiura et al cover 20 with terminal housing 21 in the Witchger apparatus would obviate the need for the Witchger tape and non-adhesive fastening feature. The Examiner's proposed modification of the Witchger invention would be contrary to the purpose and objects of Witchger and so it would not be obvious to make this proposed substitution since such a modification would destroy the Witchger invention for its above described intended purpose, see Ex Parte Thompson, 184 USPQ 558. Thus, not only would it not be obvious to use either applied reference in an electric ballast, but it also would not be obvious to combine Sugiura et al with Witchger in the manner proposed by the Examiner.

As to the Oetiker case cited by the Examiner in his Answer, this case in fact supports Applicant's argument for patentability. As noted by the Examiner, this case holds that in order for a prior art reference to be relied upon as a basis for rejecting an Applicant's claimed invention, the prior art reference must either be in the field of Applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the Applicant was concerned. The applied references are clearly not in the field of electric ballasts and are not at all pertinent to the particular problems of this prior art, much less the particular problem in this art to which the present invention is directed,

i.e. to the disadvantages of the electric ballast in the prior art patent, EP-0 018 596 (see page 1 of application).

Turning to Section [4] of paragraph (11) of the Supplemental Answer (page 8 thereof), there is no factual support presented for the Examiner's opinion statement that a "skilled artisan would have been highly motivated to combine the one piece teaching of Sugiura et al with the cover design of Witchger". This statement is therefore without merit.

As to Section [5] of paragraph (11) of the Supplemental Answer (see page 8), all this paragraph does is describe features of the two applied references. There is nothing in this statement to provide a motivation for combining same, or for the use thereof as an electric ballast. This section of the Answer has no prima facie value.

The Examiner in Section [6] of paragraph (11) unfortunately has not understood the Thompson decision set out above. The Thompson decision does not hold that the Patent and Trademark Office combination would destroy the apparatus of the modified reference. The holding there was that the Patent and Trademark Office proposed modification of the second reference would destroy the apparatus of this second reference for its intended purpose, i.e. such a modified second reference would prevent the patentee of the second reference from achieving the objects and purpose of his invention. So too in this case, the substitution of the Sugiura et

al casing (20) with terminal housing (21) for the Witchger flexible tape 31 (with aperture 33 and elements 32, 41, 42) would result in a modified Witchger apparatus that would not solve the prior art problems which Witchger intended to solve, and certainly not in the manner set out in Witchger's summary of the invention (col. 1, lines 33-39) and in the claims of his patent.

The Examiner's Supplemental Answer does not present the factual evidence necessary to support a prima facie case of obviousness as to claim 5.

As to dependent claim 3, this claim recites that the "cover has end portions which connect with each other" etc. In contrast, the ends 32 and 34 of the Witchger cover (31) do not connect with each other, as is evident from Figs. 10 and 12 of this reference, as well as column 3 thereof, and especially the last paragraph of column 3 (and the first paragraph of column 4).

Furthermore, as to claim 3, Section [7] of paragraph (11) of the Supplemental Answer (see page 9) relies on column 3, lines 27-35 of Witchger in order to support the argument that the applied prior art teaches end portions of the cover connected with each other. This is not so. The cited material connects the end 32 of strip 31 with aperture 33 which is at the same end of the strip. Aperture 33 is not in the other end of strip 31 (see the break in strip 31 in Figs. 8 and 9). In fact, the other end 34 of strip 31 is secured in place "by applying a complete circle of tape 48

around the outside of the assembly" (c.f. col. 4, lines 2-4 of Witchger). Furthermore, if one were to substitute the cover (20) - terminal housing (21) of Sugiura et al for the Witchger tape, then there would be no Witchger tape to connect its ends together (the tape would then be superfluous).

At page 5 of the Supplemental Answer, the Examiner argues, also as to claim 3, that it would have been obvious to use the coil assembly of Witchger, as modified, in conjunction with the cover in a ballast for the purpose of protecting a ballast winding from external contamination. Contrary to the Examiner's remark on contamination, the basic purpose of the claimed cover is the need for good electric insulation in an electric ballast. This is so because, during lamp ignition, high voltage peaks occur and it is important that the coil base and the cover cooperate to enclose the coil windings as much as possible so as to provide good insulating characteristics for the electric ballast. The claimed invention does not aim to prevent contamination. The Answer does not make out a prima facie case of obviousness as to claim 3 since it is factually deficient (e.g. invalid motivation).

Claim 3 is unobvious over the applied prior art since the Witchger patent does not provide the factual support to show the precise structure as defined in this claim, wherefore the Supplemental Answer does not present a prima facie of obviousness under 35 USC 103.

III. Rejection of claim 4 under 35 USC 103(a)

Claim 4 was rejected under 35 USC 103(a) as being unpatentable over Witchger in view of Sugiura et al and Leach et al (USP 4,363,014).

First of all, as argued above, it would not be obvious to combine Sugiura et al with Witchger, and Leach et al does not solve this deficiency. Also, as Leach et al does not cure any of the deficiencies noted above with respect to Witchger and Sugiura et al, any combination of these three references, even if obvious, still would not result in the novel apparatus of dependent claim 4.

Furthermore, claim 4 specifies that the end portions of the cover connect with each other by one or more snap connections. In contrast, the end portions of the bobbin cover 14 in Leach et al do not connect with each other. The Supplemental Answer furthermore relies upon element 66 in Leach et al for disclosure of a snap connection means. But Leach et al refers to receptacle 66 (col. 3, line 28) into which the end 64 of a lead 20 is inserted. The receptacle 66 in Leach et al is clearly not a part of a snap connection means for interconnecting end portions of the cover member 14. In fact, the receptacle 66 of Leach et al is not even a part of the cover 14, much less an end portion thereof.

Furthermore, if the ends (32,34) of strip (31) of Witchger connect with each other by snap connections or otherwise, then the tail end (34) of strip (31) would not be free so as to be wrapped around the coil in the manner disclosed by Witchger (see col. 3 and col. 4, first paragraph of Witchger).

In addition, if the Sugiura et al cover (20) with terminal housing (21) was substituted for the Witchger tape (31), it is not seen how one could connect end portions of the Sugiura et al cover (20) to each other, much less by means of one or more snap connections, as claimed in claim 4 of this application. Furthermore, Applicant submits that snap connections are not known in the art of electric ballasts, and especially not known is the idea of forming the insulating cover connection to itself as a snap connection.

The Examiner's statements in Sections [8] and [9] of paragraph (11) at page 9 of the Supplemental Answer appear to assume that his proposed combination still includes the strip tape (31) of Witchger, but this would not be so since such tape would not be required, and in fact would be superfluous, if the Witchger apparatus was modified to use the cover (20) - terminal housing (21) of Sugiura et al. Sections [8] and [9] of paragraph (11) of the Answer are based upon a false premise and are therefore without merit.

The Examiner's proposed combination of Witchger, Sugiura et al and Leach et al (USP 4,363,014) would not be obvious, but even if it were, it would not result in the novel and useful electric ballast as claimed in claim 4.

In view of the above, the final rejection does not present sufficient factual evidence so as to set forth a prima facie case of obviousness as to claim 4 in the manner contemplated by 35 USC 103.

CONCLUSION

In view of the above discussion, applicant submits that claims 3-5 are unobvious over the applied prior art and are in full compliance with 35 USC 112, second paragraph. It is therefore requested that the final rejection of claims 3-5 be reversed and that all of these claim be allowed.

Respectfully submitted,

By Bernard Franzblau

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APPENDIX

5. An electric ballast comprising an electric coil with coil windings having a width d which are wound on a synthetic resin coil base (10) including a box-like base part comprising four faces arranged so as to form a rectangle for accommodating a metal core, said base part being provided on either side with mutually parallel flanges (121, 122) limiting the width d of the coil windings, characterized in that:

(i) the coil base (10) is provided with a connection member (250) for engaging an external electrical connector;

(ii) the ballast further comprises a separate insulating synthetic resin cover (20) which includes as a part thereof an external insulator (25) which engages said connection member (250) of the coil base (10); and

(iii) the cover (20) engages the coil base (10) and cooperates therewith to substantially completely enclose the coil windings.

3. A ballast as claimed in claim 5, characterized in that the cover has end portions which connect with each other when the cover is in engagement with the coil base so as to substantially completely enclose the coil windings.

4. A ballast as claimed in claim 3, characterized in that the end portions of the cover connect with each other by one or more snap connections.